Policy dialogue

Finding binding constraints in the Pacific

Craig Sugden

Country Economist, Pacific Department, Asian Development Bank

Hausmann et al. (2004, 2005 and 2006) provide an important reminder of the implications of the theory of the 'second best'. In the economist's world of 'first best', an economic distortion is analysed as if it were the only distortion, and its removal can be assumed to increase community welfare (barring adverse equity effects). In the world of the second best, however, there are many distortions and the removal of one distortion can reduce economic welfare because of its interactions with other distortions. Hausmann et al. (2005) present a second-best portrayal of development, including recognition that politicians might have limited 'political capital' with which to implement reform.

It is the policy implications that Hausmann et al. attached to their 'diagnostics' framework that has attracted the most attention. Their key point is the importance of targeting economic reform on the binding constraints.

> Because across-the-board reforms are politically difficult and have often failed to achieve growth, we have offered an approach that targets the most binding constraint… different circumstances send different diagnostic signals. An approach to development based on these signals is likely to be much more effective than one based on a long list of institutional and governance reforms that may or may not be targeted at the most binding constraints on growth (Hausmann et al. 2006).

Hausmann et al. reject a laundry-list approach based on 'whatever reforms seem to be feasible, practical, politically doable, or enforceable through conditionality' (2005:5). They argue against the notions that (i) any reform is good; (ii) the more areas reformed, the better; and (iii) the deeper the reform in any area, the better.

This paper seeks to provide a practical discussion of how binding constraints on economic growth in the Pacific islands could be identified as a basis for targeted economic reform.

The growth diagnostics approach

Non-economists are justified in their interest in the identification of binding constraints. Quite reasonably, they look to economists to distill a simple statement of what needs to be done to raise income levels. Economics struggles, however, to provide this simple statement. Economic theory highlights the complexity of the growth process while

Pacific Economic Bulletin Volume 23 Number 2 2008

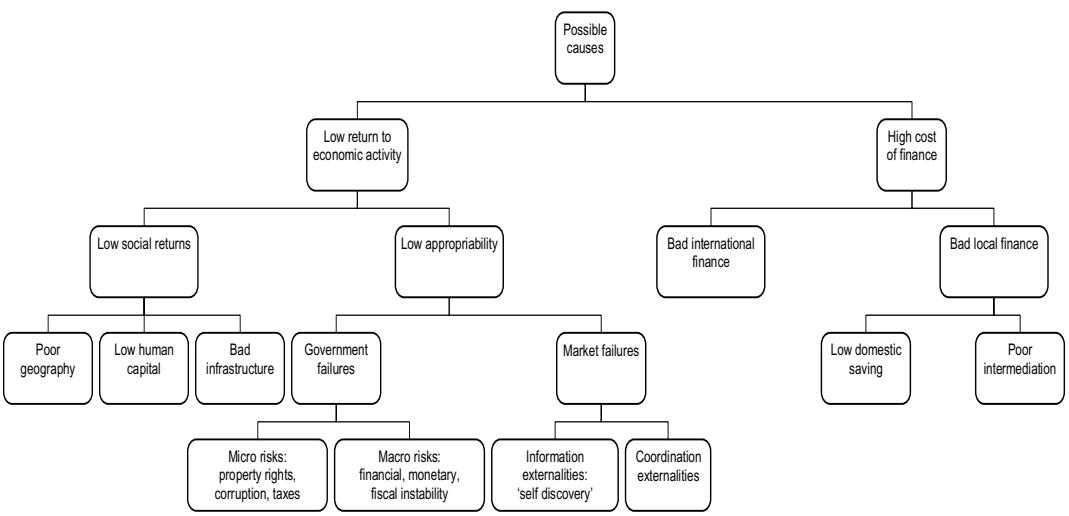
quantitative research has been unable to tease out the sought after simplification. A tension arises between the practical need and the economist's caution.

The problem in identifying a binding constraint can be illustrated by a hypothetical case. Consider a person who lost their job and, because of the fall in income, quickly fell into poverty. A lack of employment opportunities would be an obvious candidate as a binding constraint to an increase in the person's income. Suppose, however, that the person lost their job because they were repeatedly sick; and they were sick because they lived in poor standard housing, where the main housing problem was the failure of a public water and sanitation system; where this failure in turn followed a decline in world commodity prices that reduced government revenue (for example, from fish licence fees, logging or mining).

At what point does an analyst of this hypothetical situation assert that there is a binding constraint to raising income? Is the binding constraint a lack of employment opportunities? Or is the binding constraint to be found in: low world prices; the inability of the economy to find new sources of income as world prices drop; the failure of the government to reprioritise its expenditure and keep water and sanitation systems operational; or the incapacity of the individual to move quickly to better housing? The individual's lost income could have been avoided in a number of ways; which aspect presents the binding constraint?

Hausmann et al. (2006) approach the problem by adopting a 'decision tree', which is represented to interpret the economic 'signals' to reform (Figure 1). In this framework, which constitutes the core

Figure 1 **The growth diagnostics decision tree**



Source: Hausmann, R., Rodrik, D. and Velasco, A., 2006. 'Getting the diagnosis right', *Finance and Development*, 43(1):1–8.

of their growth diagnostics, the focus is on the causes of low private investment in physical capital.

> In a low-income country, economic activity must be constrained by at least one of the following two factors: either the cost of finance is too high, or the private return to investment is too low. If the problem is with low private returns, that in turn must be due either to low economic (social) returns or to a large gap between social and private returns (what we refer to as low private appropriability). The first step in the diagnostic analysis is to figure out which of these conditions more accurately characterises the economy in question (Hausmann et al. 2006).

This decision tree is one of many that could be developed from Hausmann et al.'s theoretical framework. For example, their theory recognises that capital encompasses not only physical capital, but human, managerial and organisational capital (Hausmann et al. 2006:8). Hence, they reiterate that the accumulation of human capital needs to be understood to explain the economic growth process. In the above decision tree, however, low human capital is presented as one of the potential binding constraints—that is, it is at the bottom of the branches.

The potential for alternative decision trees is noted in the subtitle of Figure 1, which in Hausmann et al. (2006) is presented as '[a] decision tree, such as the one below, can help identify the biggest obstacle to growth.' To Hausmann et al., the decision tree is presented as a way 'to organise thinking about low growth, its causes and cures' (2005:17). It is the potential value of breaking down a growth process into linked elements, built on a recognition of the challenge posed by second best, that appears to warrant the most attention, rather than just the single decision tree presented.

Growth diagnostics in the Pacific so far

Duncan and Nakagawa (2007:2) apply the Hausmann et al. (2005) approach to six Pacific island nations during the period 1995–2004 'in an effort to see what light it may throw on the generally poor economic performance of the small island states of the Pacific'. They conclude that in Cook Islands and Samoa, the binding constraints have most recently been in the provision of international airline services (in Samoa's case, the problem arose from a government monopoly). In the Federated States of Micronesia, Kiribati and Vanuatu, pervasive government monopolies were identified as the existing binding constraints to improved private-sector development. Political instability *per se* is not identified as a binding constraint, but the 'clientelist' politics that underlies the political instability—and the corruption that is often associated with it—is identified as a binding constraint in Fiji and Kiribati. This constraint was also seen to apply generally across the region. Access to secure tenure over land for infrastructure and resort and hotel development is identified as likely to be a binding constraint to development of the tourism sector in Vanuatu. Scarcity of savings was not identified as a binding constraint, except in Cook Islands in the period before the economic reforms of the mid 1990s.

Like Duncan and Nakagawa (2007), Slade (2008) presents a trial application of the growth diagnostics approach, in this case to Palau. Slade (2008) pointed to high regulatory risk in Palau, outdated and inefficient microeconomic policies and difficulties in obtaining secure land access rights as binding constraints. While larger investments were able to access (largely foreign) capital, smaller business opportunities were seen to be constrained by poor access to capital associated with

the difficulty of using land or property as collateral.

In contrast, Fallon (2008) identified deeper, underlying factors as the binding constraints to economic growth in Palau: 1) a 'subsidy mentality' that affects incentives to work and to adopt effective policies; and 2) conflicts of interest that make it difficult to gain acceptance for and to implement effective governance arrangements and policies for the benefit of the community as a whole. Although Fallon (2008) did not apply a Hausmann et al. (2005) decision tree, his approach shared the same theoretical basis.

One of the important observations from these assessments is the presence of common ground with previous analysis of constraints to economic growth. This suggests that application of the Hausmann et al. approach might yield similar policy recommendations to those already familiar to the region. This could reflect the quality of previous analysis (after all, the growth diagnostics is largely a restatement of what should be familiar to a policy adviser), the lack of the necessary data and background economic analysis needed to take full advantage of the Hausmann et al. (2005) approach, or perhaps the need for extra effort to develop the insights of growth diagnostics.

A second observation is the importance of institutional factors (for example, the accountability of politicians) in the poorly performing nations.[1] This suggests that in the Pacific, analysis of binding constraints needs to encompass the institutional setting. Notably, the assessments to date appear to be uncomfortable in factoring such issues into their analysis—to append the institutional factors once they reach the bottom branch of the decision tree.

Underlying and proximate determinants of growth

Hausmann et al. (2005:7) focus on the proximate determinants of growth: 'How can one apply the results of this rather abstract analysis of policy reform and its pitfalls? How do we locate the distortion(s) with the largest potential impact on economic growth? Our strategy is to start with some of the proximate determinants of growth.'[2] The term 'proximate determinants of growth' is not used widely so different economists might see it differently; but it can be thought of as including the more readily apparent and/or quantified determinants of growth.

Maddison (1988) offers the following formulation based on Mancur Olson's work on the importance of institutions

$$H \rightarrow (I\,S) \qquad \text{Ultimate causality}$$

$$\frac{Y}{D} = f\left(\frac{F}{D}\right) E \qquad \text{Proximate causality} \qquad (1)$$

in which H is significant historical events, I is institutions that constitute the social order, S is the degree of sociopolitical conflict, Y is gross domestic product (GDP), D is population, F is factors of production augmented by available technology and E is efficiency of resource allocation.

Maddison (1988) argues that such a framework is too simplistic, and presents an alternative, more complex formulation.

$$H \rightarrow (I\,S\,P) \rightarrow (T) \qquad \text{Ultimate causality}$$

$$\frac{Y}{D} = f\left(\frac{NLK}{D}\right) E\,C \pm A \qquad \text{Proximate causality} \qquad (2)$$

in which the additional variables are defined as P is policies, T is the distance from the technical frontier (that is, efficiency), N

is the natural resource developed and augmented, L is human capital (that is, the labour force augmented by investment in health, education and training), K is stock of all kinds of physical capital augmented by technical progress, C is the degree of capital usage and A is foreign aid or plunder.

For the purposes of this discussion, a key point is that there is a distinction and a link between the proximate and underlying factors, but causality runs in one direction. It appears reasonable to think that a binding constraint to growth will manifest at the proximate level if there is a binding constraint to growth at the underlying level. As long as the causality is predominantly from underlying to proximate cause, however, it is feasible that there can be a binding constraint at the proximate level but not at the underlying level.

In practice, this could mean that if, for example, an institution constitutes a constraint on growth, a constraint to growth is likely to be evident in the availability of capital, factor productivity and so on. The true binding constraint would, however, be seen most sensibly to be at the institutional or underlying level. It is also possible that the institutional environment is conducive to growth but a market failure is reducing investment or factor productivity; in which case, the binding constraint would be at the proximate level.

Institutions are known to be critical to development, with some arguing that favourable institutions are an essential precursor to economic growth. It is possible they are more important in the Pacific than elsewhere. In comparison, many Asian countries appear to have demonstrated by their growth performance that they have an institutional environment conducive to growth. With a small number of exceptions, this is yet to be demonstrated convincingly in the independent Pacific island states.[3]

When are institutions binding constraints?

To put into practice the view that institutions are potentially a binding constraint to economic growth in the Pacific, it is necessary to formulate a test of institutional quality. The test proposed is whether governments are able to identify and implement welfare-improving policy initiatives—that is, Kaldor-Hicks welfare gains. If there is a good track record in this regard, it is a useful working assumption that the institutional environment is sufficiently conducive to economic growth for the binding constraint to be found elsewhere.

In the Pacific, it is particularly important to avoid misinterpreting growth that has been led by external factors or resource harvesting as satisfaction of the test. An economy that is enjoying strong external support or resource-led growth is likely to see economic expansion on a range of fronts. Such growth does not, however, necessarily imply an institutional capacity to identify and implement welfare-improving policy initiatives.

It is also important to avoid a superficial examination of the quality of public policy. Well and poorly performing governments can be expected to adopt similar policy platforms in the Pacific. Well-performing governments need good policy to raise community welfare. Poorly performing governments need similar policy statements to support claims of legitimacy and good intent, while in truth the policy statements are a façade. Good policy needs to be demonstrated, not just proclaimed.

The author's preliminary, subjective assessment concludes that among the independent Pacific island nations, only Cook Islands and Samoa could be thought of as having an institutional environment sufficiently conducive to economic growth

(Figure 2).[4] For these countries, the binding constraints to growth are more likely to be at the proximate level. Other Pacific islands nations send some signals that they have the required institutional environment. For the other independent Pacific island nations, the institutional environment is so weak that the binding constraints to economic growth are very likely to found at the underlying level.

This schema provides guidance for broad directions for public policy. When the binding constraints are at the institutional level, the priority for assistance lies in what has become known as good governance. Drawing on the insight from economics that supply cannot create demand, demand-side initiatives should receive priority in the weakest institutional environments of the independent Pacific island nations. Demand-side initiatives include raising education and health standards and access to public services and income-earning opportunities. These initiatives empower people to demand more from government. Supply-side initiatives, such as changes to the machinery of government and formal accountability mechanisms, become more important only when the demand for good governance is in place. For those economies with an institutional environment that is conducive to economic growth, the priorities are likely to be found in the constraints to private-sector development.

A broader decision tree for binding constraints?

How can these ideas be tested and developed in growth diagnostics? Hausmann et al., place corruption and crime and other aspects of property rights at the bottom of the decision tree, and hence constitute one of the exogenous factors that might be binding.[5] Economists working in the Pacific should treat property rights as endogenous

Figure 2 **A potential schema of binding constraints in the Pacific**

Are institutions binding constraints?	Policy response	Pacific island nation
Yes	Demand-side governance (for example, education, health, infrastructure)	Papua New Guinea Kiribati Solomon Islands Timor-Leste Vanuatu Federated States of Micronesia
	Supply-side governance (for example, public financial management, agency strengthening, planning)	Marshal Islands Tonga Tuvalu Palau Fiji Islands
No	Private sector development (for example privatisation, regulatory reform, infra-structure bottlenecks)	Samoa Cook Islands

and hopefully find a way to strengthen them through good public policy.

One option to endogenise such factors is to develop the branches of the original decision tree until institutional factors are identified. As Hausmann et al. (2005:10) explain: 'Moving down the branches of the decision tree is tantamount to discarding candidates for the most binding constraint on growth. The over-arching lesson from our theoretical analysis is that it is this constraint, once identified, that deserves the most attention from policy makers.'

The Asian Development Bank (ADB 2008) finds it helpful to move down the branches in an analysis of the Philippines—although this is not made explicit through the addition of lower-level branches.

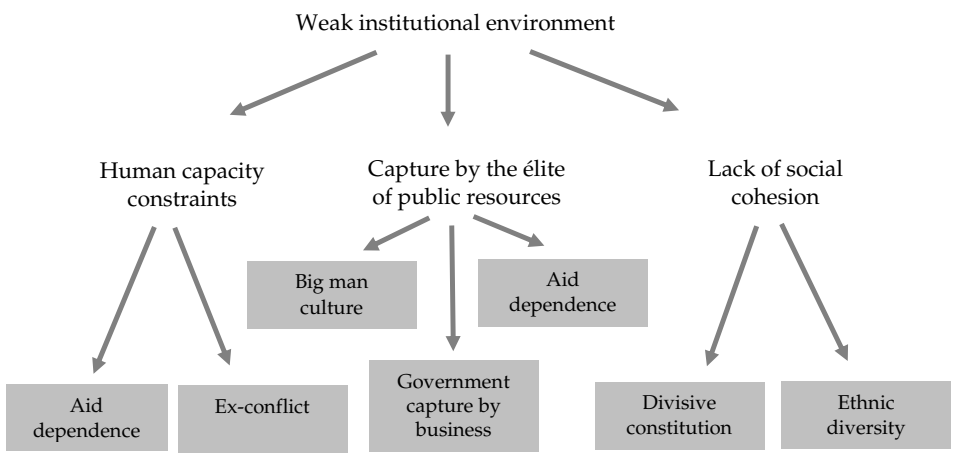
An alternative approach could be to formulate a decision tree in which the original Hausmann et al. (2006) formulation is one branch and institutions is a second. An illustrative formulation of an institutional branch is presented in Figure 3.

What to do with a binding constraint?

Would this mean that all public policy initiatives should focus on the binding constraints? Hausmann et al. have good theoretical support for their view that policy reform should be limited to binding constraints. Binding constraints are, however, difficult to identify categorically, and there is enough uncertainty about the growth process and the interrelationships within an economy to suggest caution in adopting too narrow a perspective.

Moreover, there are issues of capacity building and sequencing to consider. For example, it could take some time to build a business environment conducive to the private sector. Champions who emerge to lead change at the institutional level might quickly lose support if binding constraints subsequently emerge to private-sector development and choke off the realisation of benefits from institutional reform. Actions

Figure 3 **A Pacific institutional branch?**



might need to start early across a broad front if the economy is to avoid lurching from one binding constraint to another.

Layering reforms, while prioritising the binding constraints, is an attractive approach given these observations.

Conclusion

Growth diagnostics is a potentially useful tool for identifying the binding constraints to economic growth in the Pacific. It presents a well thought out, helpful economic framework with an innovative decision-tree analysis. The decision tree proposed by Hausmann et al. (2006) should not, however, be seen as necessarily the preferred or the only approach. Given data and other limitations peculiar to the Pacific, there is some risk its application will only restate old ideas while adding new terminology and complexity to a struggling discussion. Depending on how it is applied, it could also underplay some of the underlying, institutional constraints.

These concerns apply to some Pacific island nations more than others. Institutional environments are probably sufficiently conducive to growth in the Cook Islands and Samoa for the binding constraints to lie elsewhere. Among the independent Pacific island nations, Hausmann et al.'s (2006) growth diagnostics decision tree is suited most readily to these nations, albeit potentially with some tailoring to local conditions.

Elsewhere in the Pacific, the binding constraints are more likely to be at the underlying, institutional level. This is even more likely for the other independent Pacific island nations. While the growth diagnostic decision tree of Hausmann et al. (2006) is able to capture institutional factors, incorporating the Pacific's institutional dimensions could come at the expense of simplicity and openness. Non-economists, in particular, might find it hard to follow such an approach.

A decision tree oriented to institutional analysis might be desirable when binding constraints are likely to be at the institutional level. Options include a separate institutional branch or a move further down the decision tree until institutional factors are identified.

Notes

1 Economics distinguishes between institutions and agencies. Institutions are the formal and informal systems that establish the 'rules of the game'. They can be thought of as the human-devised incentives and constraints on market and non-market economic transactions. In this terminology, government departments are agencies rather than institutions (see, for example, Hasan et al. 2007 for a recent discussion and Duncan and Pollard 2002 for background on the literature).

2 These are listed as 'saving, investment, education, productivity, infrastructure, and so on' (Hausmann et al. 2005:7).

3 Duncan and Nakagawa (2007) discuss the consequences of the region's institutions for economic growth, drawing on Keefer (2004). Crocombe (2001) provides important background.

4 This schema shares features with that presented by Duncan and Pollard (2002).

5 This is made clearer in Hausmann et al. (2004:17), in which a broader formulation of the growth model incorporates an exogenous variable representing the probability that an investor will be able to reap the fruits of his investment, and where a high probability is attached to microeconomic risks (corruption, crime) and macroeconomic risks (current account crises and financial melt-downs).

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Acknowledgments

The contributions of Ron Duncan, Emma Ferguson, Tony Gill, Bruce Knapman, Paul Holden, Raquel Tabanao, Kiyoshi Taniguchi, Vinnie Wicklein, Eugenue Zhukov and participants at a Pacific Department/Economic Research Department (Asian Development Bank) workshop are gratefully acknowledged. Views expressed in this paper are not necessarily those of the Asian Development Bank, its executive directors or the countries they represent. Responsibility for any errors rests with the author.